

Nov. 29th, 1879. Good definition. Power 282. The web was set perpendicular to the plane of the ring.

Tethys in conjunction with west end of ring: *np.*

h. m.

(a) 7 20 Not yet in conjunction.

(b) 25 In conjunction.

(c) 30 Certainly just past.

(a), (c) good; (b) probably the best observation.

Dec. 6th. *Dione* in conjunction with end of ring: *nf.*

h. m.

9 30 Not up yet.

35 In conjunction.

40 Past.

Power 282. Pretty good definition.

Notes on the Physical Appearance of Jupiter: being part of the Paper "Observations of Eclipses, Occultations and Phenomena of Jupiter's Satellites made with the 8-inch Equatoreal (Cooke) at the Adelaide Observatory, South Australia" (ante, pp. 170-176). By C. Todd, Esq., Director of the Observatory.

1878, July 5, 10.25 P.M.—North of the equatoreal belt was a well-defined streak of dark salmon colour; the dark belt on the south of the equator was covered with scattered white-looking clouds, to the south of which was a bright belt, having a remarkable bright spot, like a cumulus cloud, on the southern edge; on the meridian, to the east of which, at some distance, was a well-defined rectangular indentation.—(T.)

July 21, 9.45 P.M.—The appearance of the salmon-coloured streak was as if viewed through a thin veil of cloud. On the south edge of the equatoreal cloud belt was an oval brilliantly white cloud, nearly on the equator and exactly mid planet.—(T.)

July 26, 8.35 P.M.—At three minutes after observation No. 23, the shadow was about its own diameter inside the limb of planet, and immediately following the satellite—in fact, touching it to all appearance. The satellite entered on the dark band north of the equator, the central portions of which were of a bright sienna, or a nearly rose colour. The equatoreal cloud belt was generally diffused, but its central parts were very dense, having the appearance and shape of cumulus clouds. The dark belts have still the appearance as if seen through hazy cloud or fog. The satellite when it first entered planet appeared large and bright, but became gradually smaller—still bright—and the shadow seemed larger than the satellite.—(R.)

July 29, 8.35 P.M.—The equatoreal belt is not so broad or so well defined as usual, and consists of comparatively narrow streaks of broken cloud on the southern edge; the northern dark belt is not at all well marked, and is of a rose salmon colour, especially on the north side; the southern dark belt is broken by streaks of white cloud, and is not so well marked or defined, although broader than the northern belt, and is less highly coloured.—(T.)

July 29, 10.50 P.M.—No. 1 satellite and its shadow traversing the north portion of the equatoreal belt, and almost touching each other; the shadow

a little to the north of satellite, the south pole of the shadow being in line with the equator of the satellite. The equatoreal belt is broader than before, and the north brown belt darker; the southern dark belt is broken by a white streak, stretching nearly across the planet, and is hazy, and not so red or brown as the north belt.—(T.)

August 9, 7.50 P.M.—*Jupiter* well defined. The long, oval, dark reddish patch south of the southern belt, noticed on the 4th, still visible, but I think slightly longer. The bright patch on bright belt not distinguishable.—(T.)

August 13, 10.0 P.M.—The oval red space on southern bright belt, noted on the 4th, still visible, but not the bright spot on the equatoreal cloud belt, but a bright spot very like it precedes it several Jovian hours, being near the western edge of the planet when the red space was rather more than half visible on the opposite or eastern side of the planet.—(T.)

October 1, 10.0 P.M.—The equatoreal cloud belt was dense, and the occultation was complete at limb. It may be here remarked, as a general note, that the satellites, as a rule, are not visible through the dense white cloud belts, but are seen at occultation through the broken cloud belts and brown belts.—(T.)

October 2, 10.0 P.M.—The southern dark belt this year has generally been covered with a thin film of white cloud, and has seldom the decided salmon tint noticed in previous years, occasionally assuming a greyish green. The equatoreal bright belt to-night resembled a bank of cumulus cloud with its base toward the north and its crest toward the south. The northern dark belt is narrow, and of a salmon tint, varied by dark streaks and patches.—(T.)

Phenomena of Jupiter's Satellites observed at Mr. E. Crossley's Observatory, Bermerside, Halifax. By Mr. J. Gledhill, F.R.A.S.

The instrument with which the following observations were made is an Equatoreal having an aperture of $9\frac{1}{2}$ inches. The power used was almost invariably 240: occasionally powers 330 and 470 were applied:—

Day of Obsn.	Satellite	Phenomenon	G.M.T. of Obsn.	Time from N.A.	Remarks
1879			h. m. s.	h. m. s.	
Aug. 30	I.	Oc. R. first seen	10 6	10 8	very bad definition
		half out	7		
		just off	8 30		
31	III.	Tr. E. first contact	11 11	11 19	very bad definition
		half off	15		
		just off	19		
Sept. 14	I.	Tr. I. first contact	8 29	8 29	bad definition
		bisection	30 30		
		second contact	32		
14	I.	Sh. I. bisected	8 52 30	8 51	bad definition
		fully on disk	55		
14	II.	Oc. D. first contact	10 14	10 15	bad definition
		disappearance	18		

x 2